



*Greater Egret in the Lotuses* by Cherrie Corey

## Seven-Year Action Plan

**This seven-year action plan provides specific actions Concord can take for each open space and recreation goal and objective. The action plan identifies key areas for protection, trail improvements, mechanisms for protecting farmland, and strategies for working with neighboring towns. By implementing these actions, Concord will increase the connectivity of its natural areas, improve its rich ecological diversity, clean its waterways, protect its farmland, and begin planning for climate change mitigation and adaptation.**

This plan builds on the broad perspective and analysis of the 2004 *Open Space and Recreation Plan*, while incorporating current Town needs and resident feedback. All recommendations are addressed to the Town of Concord, as well as to the broader Concord community. Most are also addressed to one or more organizations or agencies as potential collaborators. Successful implementation of these actions will require cooperation and sustained effort from all parties. In addition to collaboration, successful implementation of the following goals, objectives, and actions will depend upon funding and appropriation. Most initiatives will be accomplished with the use of Town funds, either within the operating budget or as capital projects, and will rely highly on volunteer participation. When additional funds are needed, applications will be submitted to the Community

Preservation Committee for Community Preservation Act funds.

Highest priority is given to actions proposed to be completed in years 1-3. The goals should be reviewed annually, updated, and reevaluated to ensure consistency and relevancy with current goals and objectives. An action map is included on the next page and followed by other action items.

At the end of this section is a map of open space and recreation accomplishments since the 2004 Open Space and Recreation Plan. For a description of accomplishments as well as a complete list of conservation and recreation accomplishments since 1992, see appendix G at the end of the report.

# Seven-Year Action Map

## Seven-Year Action Map

The map on the next page identifies actions for the Town of Concord:

- Key areas to protect for their ecological, agricultural and recreational values (green numbers and areas);
- Potential Agricultural Overlay districts to be implemented (black polygons previously identified by the Town and proposed additional Agriculture Overlay based on current analysis in blue);
- Potential Transfer of Development Rights to within one-half mile of train stations;
- Potential vernal pools that should be surveyed and certified;
- Proposed trail improvements on publicly accessible protected land, making recreational resources more available throughout Town (dark orange and yellow lines).

Additional criteria that could be used to prioritize the identified lands of conservation and recreation interest include:

- Presence of prime or statewide importance agricultural soils;
- Proximity to identified Special Sites;
- Land that could be used for trails or to connect trails; and
- Current Use Program Lands (Chapter 61, 61A, and 61B).

### Agricultural Preservation Restriction (APR)

APR is a state funded preservation tool that seeks to protect agriculturally productive land through permanent deed restriction. Towns can apply for, and sometimes match, state funds in order to purchase the restriction which limits use in order to maintain agricultural potential.<sup>46</sup>

### Transfer of Development Rights (TDR)

TDR is a development tool that restricts growth in certain areas (sending districts) by transferring the development rights for those areas to more suitable locations (receiving districts). In this way open space, agricultural land, sensitive habitats, and areas with some form of recreational potential may become permanently protected by focusing growth

in urban centers, areas near public transportation lines, or underutilized properties in town. For example, development rights might be transferred to areas within one-half mile of commuter rail stations. This would foster walkability in town and a decreased dependence on automobiles, thereby reducing carbon emissions in the town. In this way, important open space land is protected, economic growth and development is allowed to continue, and climate change issues are also addressed (see Appendix B for full discussion of TDR).<sup>45</sup>

Transfer of development rights has had limited application in Concord. The 1992 Town Meeting adopted Zoning Bylaw Section 6.3.4 “Dedication of Land to the Town of Concord for Municipal or Other Public Uses,” which allowed only property owners in the Limited Industrial Park District (Forest Ridge Road) to transfer development rights within the District. One property owner subdivided a 25-acre parcel into two parcels equal in land area; he then transferred the development rights from the land he gave to the Town as open space (creating a buffer between the StarMet site and other land in the Forest Ridge development) to the land he continued to own.

Transfer of development rights on a broader scale requires significant investment in community outreach and education to understand and agree upon the value of the land to be protected, the extent of development possible and the increased development potential of the land receiving the development rights. Concord has frequently found simpler and easier solutions to protect land that is valued for open space, agriculture, historic preservation, or recreation purposes.

### Agricultural Overlay District

First discussed in the 2005 Comprehensive Long Range Plan, an agricultural overlay district essentially limits development in areas deemed agriculturally important through the assessment of certain key characteristics including: availability of prime agricultural soils, proximity to major blocks of farmland, the size of the parcel, the degree of development, and other risk factors. If a special Agricultural Overlay District were created, then the regulations of the underlying residential district would be modified by stricter controls and/or the provision of additional development options for use of the property.<sup>40</sup>





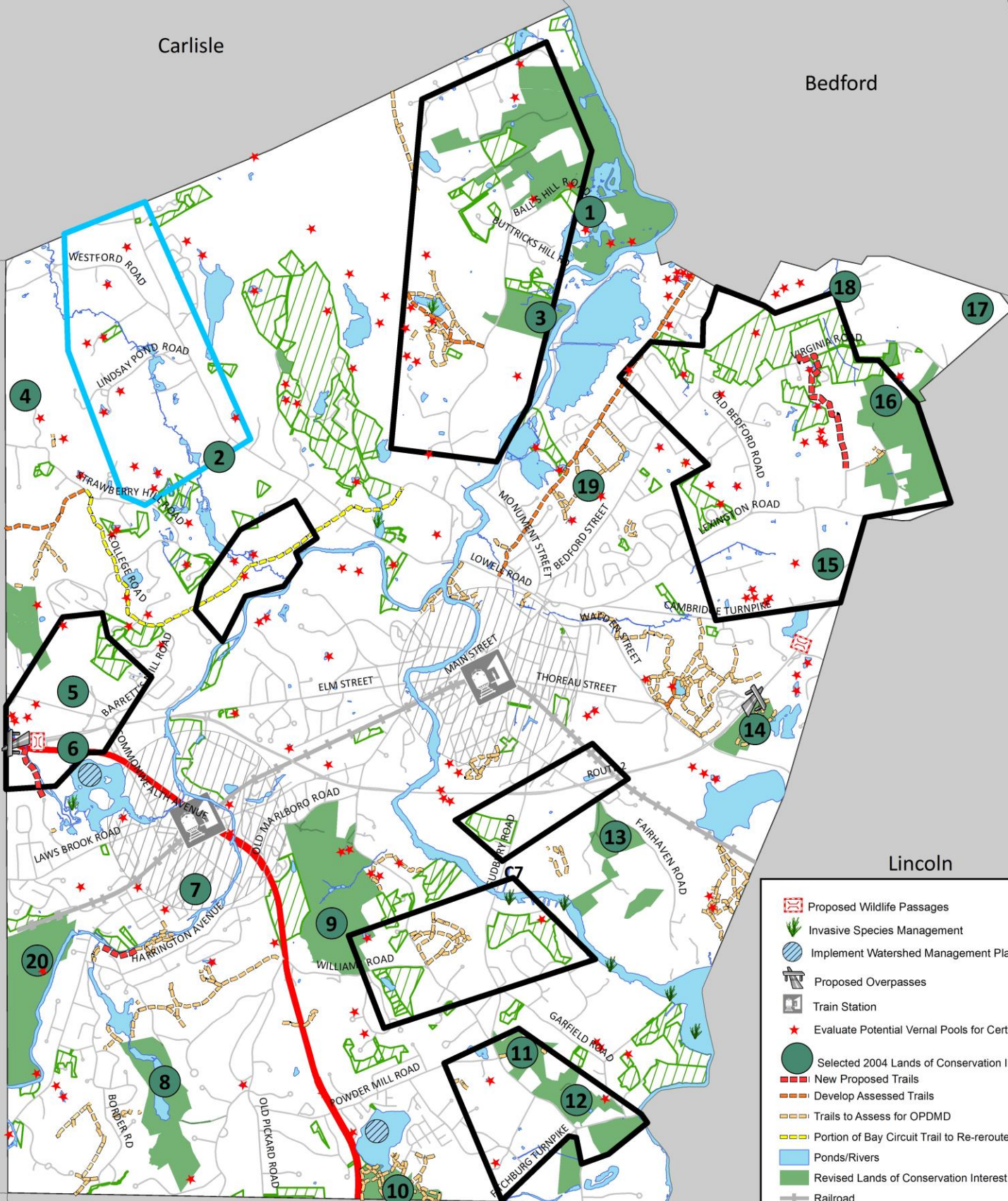
Carlisle

Bedford

Acton

Lincoln

Maynard



0 0.25 0.5 1 1.5 Miles

### Seven-Year Action Map

- Proposed Wildlife Passages
- Invasive Species Management
- Implement Watershed Management Plan
- Proposed Overpasses
- Train Station
- Evaluate Potential Vernal Pools for Certification
- Selected 2004 Lands of Conservation Interest
- New Proposed Trails
- Develop Assessed Trails
- Trails to Assess for OPDMD
- Portion of Bay Circuit Trail to Re-route
- Ponds/Rivers
- Revised Lands of Conservation Interest
- Railroad
- New Proposed Ag Overlay District
- Proposed Ag Overlay Districts
- Proposed TDR Receiving Area
- Proposed Bruce Freeman Rail Trail
- Roads
- Monitor Town Conservation Restrictions

**Acronyms of organizations potentially responsible for implementing action items:**

**CONCORD**

<b>AC</b>	Agriculture Committee
<b>ADAC</b>	ADA Coordinator
<b>BFRTAC</b>	Bruce Freeman Rail Trail Advisory Committee
<b>BOA</b>	Board of Assessors
<b>BOS</b>	Board of Selectmen
<b>CCC</b>	Concord Cemetery Committee
<b>CPC</b>	Community Preservation Committee
<b>CPS</b>	Concord Public Schools
<b>CPW</b>	Concord Public Works
<b>CSEC</b>	Comprehensive Sustainable Energy Committee
<b>DNR</b>	Division of Natural Resources
<b>FinCom</b>	Finance Committee
<b>HD</b>	Health Department
<b>NRC</b>	Natural Resources Commission
<b>PB</b>	Planning Board
<b>PWC</b>	Public Works Commission
<b>REC</b>	Recreation Department
<b>TM</b>	Town Manager
<b>WCTF</b>	West Concord Task Force
<b>WPAC</b>	White Pond Advisory Committee
<b>ZBA</b>	Zoning Board of Appeals

**GOVERNMENT**

<b>DEP</b>	Department of Environmental Protection
<b>DOC</b>	Mass Dept. of Corrections
<b>DCR</b>	Mass. Dept. of Conservation and Recreation
<b>EOEEA</b>	Executive Office of Energy and Environmental Affairs
<b>MassDOT</b>	Mass Dept. of Transportation
<b>MAPT</b>	MassPort
<b>NHESP</b>	Natural Heritage of Endangered Species Program
<b>NPS</b>	National Park Service
<b>NRCS</b>	Natural Resources Conservation Service
<b>RSC</b>	Wild and Scenic River Stewardship Council
<b>USFW</b>	U.S. Fish and Wildlife Service

**PRIVATE**

<b>AUD</b>	Mass. Audubon Society
<b>BCT</b>	Bay Circuit Alliance
<b>CC</b>	ConcordCan
<b>CLCT</b>	Concord Land Conservation Trust
<b>CISMA</b>	Cooperative Invasive Species Management Area
<b>FOPAR</b>	Friends of the Playscape at Ripley
<b>OARS</b>	Organization of the Assabet River
<b>SVT</b>	Sudbury Valley Trustees
<b>TTOR</b>	The Trustees of Reservations
<b>WWP</b>	Walden Woods Project

**GOAL 1: Protect water resources and biodiversity.**

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>A. Protect Concord's large natural areas and major wildlife corridors.</b>								
1. Construct wildlife passage at Crosby's Pond.	NRC, MassDOT	•	•					
2. Evaluate constructing a wildlife/pedestrian connectivity near Route 126.	BOS, TM, NRC, PB, WWP, CLCT, AUD, MassDOT,			•				
3. Develop wildlife corridor near Acton line where Nashoba Brook crosses and is joined by Fort Pond Brook.	NRC, PB, MassDOT, BFTRAC			•	•			
<b>B. Manage quantity and quality of groundwater and surface water to protect the town's water resources.</b>								
1. Assess potential impacts of climate change on flooding and the need to accommodate larger volumes of floodwater expected to result from the effects of climate change.	BOS, TM, NRC, PWC, PB, CC	•	•	•	•	•	•	•
2. Systematically study lands surrounding ponds and rivers to identify threats to water quality and actions to be taken to improve these conditions.	NRC, DNR, CPW, HD, OARS, DCR, USFW, RSC, WPAC	•	•	•	•	•	•	•

## GOAL 1 (Continued): Protect water resources and biodiversity.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
3. Promote town-wide water saving techniques.								
a. Evaluate limiting watering to odd or even days.	CPW		•					
b. Promote handheld hoses for watering instead of sprinkler systems and discourage use of yard irrigation systems.	CPW, NRC	•	•	•	•	•	•	•
c. Encourage residents to use the rain barrel program in town through public education.	CPW, NRC	•	•	•	•	•	•	•
d. Continue to encourage residents to convert to low-flush toilets through promotion of the toilet rebate program.	CPW	•	•	•	•	•	•	•
4. Continue to protect open space near well-heads.	BOS, TM CPW, NRC, PB	•	•	•	•	•	•	•
5. Increase public education about detrimental effects of fertilizer runoff in streams and other anthropogenic impacts to streams, rivers, ponds, and wetlands.	CPW, NRC, DNR, AC, OARS	•	•	•	•	•	•	•
<b>C. Protect and/or monitor Concord's streams, rivers, ponds, and wetlands.</b>								
1. Develop a Watershed Management Plan for White Pond.	DNR, WPAC	•						
2. Implement White Pond Watershed Management Plan.	NRC, DNR, WPAC		•	•	•	•	•	•
3. Implement Recommendations from the 2010 Warner's Pond Watershed Management Plan.	NRC, DNR	•	•	•	•	•	•	•
4. Develop a surface water monitoring program.								
a. Systematically sample streams and ponds across town for water-quality characteristics such as phosphorus, nitrogen, chlorophyll, BOD, <i>E. coli</i> , turbidity, salt, and other toxic substances to evaluate and create a baseline.	NRC, DNR, HD, CPW, OARS, DCR, USFW	•	•	•	•	•	•	•
<b>D. Protect biodiversity and state-listed species in Concord.</b>								
1. Develop a Biodiversity Committee.	NRC		•					
2. Monitor wildlife and biodiversity to establish baselines and measure change over time, and protect key habitats within BioMap2 Core Habitat that are not under permanent protection.	DNR, CLCT, WWP, SVT, AUD, USFW, NHESP, TTOR		•	•	•	•	•	•

## GOAL 1 (Continued): Protect water resources and biodiversity.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
3. Continue invasive species management.	DNR, CLCT, WWP, SVT, AUD, USFW, NHESP, TTOR, CISMA	•	•	•	•	•	•	•
4. Support and encourage participation in annual events that celebrate wildlife diversity such as Big Night, Biodiversity Days, and the Christmas Bird Count.	DNR, AUD	•	•	•	•	•	•	•
5. Support certification of potential vernal pools identified by the Natural Heritage and Endangered Species Program.	NRC, DNR, NHESP, CLCT	•	•	•	•	•	•	•
6. Evaluate lengthening bridges, where feasible, when being reconstructed.	PWC, CPW, NRC, PB, MassDOT				•			
7. Evaluate removing dams in rivers and streams to allow aquatic species migration.	NRC, OARS, RSC		•					
<b>E. Prioritize remaining parcels along waterways for protection if and when they become available.</b>	BOS, TM, NRC, PB, CLCT	•	•	•	•	•	•	•
<b>F. Revise zoning laws to further protect open space in town.</b>								
1. Form a committee to assess a zoning revision based in part on the open space framework to align zoning with current understanding of natural resources.	BOS, TM, PB, ZBA, NRC				•			

## GOAL 2: Improve connectivity of and access to recreational resources.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>A. Reduce major impacts of Route 2 (such as barrier to pedestrians /cyclists/wildlife, and too much salting, traffic).</b>								
1. Evaluate overpass for pedestrians /cyclists at Rt. 126.	BOS, TM, NRC, PB, WWP, CLCT, AUD, MassDOT,			•				
2. Construct overpass for Bruce Freeman Rail Trail.	NRC, PB, MassDOT, BFTRAC			•	•			
<b>B. Continue developing the local/ regional trail network for transportation and nature-based recreation.</b>								
1. Provide online information to share trails and knowledge about natural and recreational programs in Concord.	REC, DNR	•	•	•	•	•	•	•



## GOAL 2 (Continued): Improve connectivity of and access to recreational resources.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
2. Develop town trail maps and guide.	NRC, DNR	●	●	●				
3. Complete proposed trail connections and further assess potential new ones to improve accessibility of recreational resources.	BOS, TM, NRC, DNR, PB, CCC, CPW, REC, WCAC, BFRAC, MassPort, NPS, DOC	●	●	●	●	●	●	●
4. Establish and enhance open spaces in and around the town centers, connected where feasible to town trail systems and public transportation, to improve walkability of the community.	BOS, TM, PB, CPW, NRC, WCAC, HD		●		●		●	
5. Install signs, parking, and trail markers where appropriate.	CPW, NRC, DNR			●		●		●
6. Secure public access to existing trails when opportunities arise, such as when subdivisions are proposed.	PB, ZBA, NRC	●	●	●	●	●	●	●
7. Study and plan for bicycle use in the Concord to Bedford corridor and from Route 126 to Concord Center.	BOS			●				
8. Pursue former Landfill and Brister's Hill Trails, Old Mill Crossing, and connection to prison land off Wright Road.	BOS, TM, CPW, NRC, WWP, DOC			●	●	●	●	●
9. Reevaluate route of the Trail of the Colonial Militia from Bedford St. to Meriam's Corner.	BOS, TM, NRC, NPS, CLCT					●		
10. Evaluate Assabet Trail extension South of Main St.	BOS, TM, WCAC, NRC, CLCT			●				
11. Continue rerouting regional Bay Circuit Trail off town roads, and better link with other trails to enhance safety and experience.	BCA, DNR, NRC	●		●		●		●
<b>C. Establish committee to conduct in-depth study of potential improvements in resources and safety for bicycling in town.</b>								
1. Determine and map safest cycling routes through town.	CPW	●	●					
2. Provide maps in printed and online format.	CPW						●	●
3. Install signs to facilitate navigation and safety for cyclists.	CPW			●	●	●		
<b>D. Provide neighborhood-oriented opportunities for recreation and gardening by creating informal playing fields, expanding community garden locations, maintaining and improving existing playgrounds, etc.</b>								
1. Evaluate town lands for creation of informal playing fields.	BOS, TM, REC	●		●		●		

## GOAL 2 (Continued): Improve connectivity of and access to recreational resources.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
2. Develop a new community garden at Rogers Land.	DNR, CLCT		●					
3. Evaluate town lands for creation of additional community gardens.	DNR, AC	●	●	●				
4. Maintain and improve existing playgrounds.	REC, CPW, CPS	●	●	●	●	●	●	●
<b>E. Improve universal access to open space resources.</b>								
1. Develop a policy regarding other power driven mobility devices.	BOS, TM, NRC, CLCT	●	●					
2. Evaluate town trails for use by other power driven mobility devices.	BOS, TM, NRC, PWC, CCC			●	●	●		
3. Construct and support Ripley Playscape.	CPS, FOTPAR	●	●	●				
<b>F. Support maintenance, improvement, and potential development of active recreation resources.</b>								
1. Develop a Recreation Facilities Strategic Plan.	REC	●						
2. Evaluate possible town-owned locations for creation of a gymnasium.	REC			●				
3. Consider a dog park to assist in the control of dogs in public areas.	BOS, TM, NRC		●	●				

## GOAL 3: Protect agricultural land including fields, meadows, and orchards.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>A. Prioritize agricultural land to protect based on threat of development, proximity to other farmland, lot size, overlap with other OSRP goals, water availability, and prime agriculture soils.</b>								
1. Create a database of Chapter 61A lands.	NRC, BOA	●						
2. Develop evaluation system to prioritize Chapter 61A lands for acquisition.	NRC, AC, CLCT		●					
3. Evaluate Chapter 61A lands and reassess annually.	NRC, AC, CLCT			●	●	●	●	●
4. Create database of all agricultural land in Concord.	AC	●	●					
<b>B. Promote zoning changes to protect agricultural land including agricultural overlay districts and transfer of development rights.</b>								
1. Evaluate creation of Agricultural Overlay Districts.	AC, PB, NRC, CLCT		●		●			



### GOAL 3: Protect agricultural land including fields, meadows, and orchards.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
2. Evaluate appropriateness of Transfer of Development Rights to protect agricultural lands.	AC, PB				●			●
3. Promote large-lot zoning to protect prime agricultural soil from being subdivided.	PB	●						
<b>C. Promote conservation programs that protect farmland such as Agricultural Preservation Restrictions and Community Preservation Act.</b>								
1. Encourage farmers to place their lands under an Agricultural Preservation Restriction.	AC	●	●	●	●	●	●	●
2. Apply for Community Preservation Act funds to acquire agricultural lands as they become available.	BOS, TM, NRC, PB, AC, CPC, CLCT	●	●	●	●	●	●	●
<b>D. Support farmers and local food in Concord.</b>								
1. Support farmer's Community Supported Agriculture initiatives and other efforts to protect Concord's agricultural heritage.	BOS, TM, NRC, DNR, AC, CLCT	●	●	●	●	●	●	●
2. Provide information on farm programs, regulations, and best agricultural practices to the local farming community.	AC, CPW, NRSC, DNR		●	●	●	●	●	●
3. Evaluate conversion of conservation land back into agricultural production.	NRC, DNR, AC		●	●				
4. Bring Rogers Land back into active agriculture.	TM, NRC, DNR, CLCT	●	●					

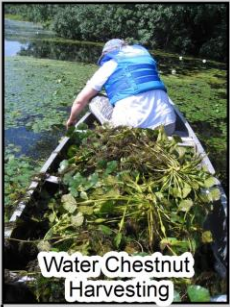
### GOAL 4: Improve collaboration and management.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>A. Incorporate the Open Space and Recreation Plan in town and community decision-making.</b>								
1. Town should host meeting of interested persons in the fall to review progress on the OSRP.	NRC	●	●	●	●	●	●	●
2. Town should consider creating a new staff position to oversee open space and recreation planning. This person would be responsible for tracking and implementing OSRP actions, facilitating communication between departments and committees, writing grant proposals and researching other funding opportunities, and facilitating public outreach and education opportunities related to open space and recreation in town.	BOS, TM, NRC, FinCom					●	●	

## GOAL 4 (Continued): Improve collaboration and management.

	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
3. One member of each town board or committee should be designated to be informed about open space issues and opportunities relevant to their respective entity.	BOS, TM, FinCom, PWC, PB, NRC, AC, REC, HD	●	●	●	●	●	●	●
<b>B. Think regionally and work collaboratively with neighboring towns.</b>								
1. Meet bi-annually with conservation professionals from surrounding towns to discuss regional land protection efforts.	DNR	●	●	●	●	●	●	●
2. Continue involvement with SuAsCo Cisma.	NRC, DNR, CLCT, SVT, WWP, TTOR	●	●	●	●	●	●	●
<b>C. Continue to partner with land trusts, government entities, and individuals to make full use of available government funds and programs, as well as laws and regulations, to acquire and/or protect important land parcels.</b>	BOS, TM, NRC, DNR, CLCT, SVT, WWP, TTOR, DCR, NHESP, EOEAA, DEP, MassPort	●	●	●	●	●	●	●
<b>D. Manage all town-owned land consistent with open space objectives.</b>								
1. Develop Land Management Plans for town conservation lands based on inventory and evaluation of each property to provide thoughtful stewardship and to protect the land's values and enhance and define the visitor experience.	NRC, DNR		●	●	●	●	●	●
2. Evaluate municipal lands for conservation and recreation interests.	NRC, REC	●	●	●	●	●	●	●
3. Continue to develop Baseline Documentation Reports for town CR lands.	NRC, DNR	●	●	●	●	●	●	●
4. Continue to monitor town CR lands for compliance.	NRC, DNR	●	●	●	●	●	●	●
5. Form a Comprehensive Long Range Plan Update Task Force and complete update.	PB		●	●				
<b>E. Secure funding and partner with other entities for open space land protection.</b>								
1. Evaluate increase in CPA funds to 3%.	CPC			●				
<b>F. Increase educational outreach and promote resource conservation, sustainability, and climate change mitigation.</b>								
1. Develop an invasive species management site on the town website.	DNR	●						
2. Encourage residents to participate in stewardship of their unique natural resources through Audubon International's Environmental Stewardship Program.	NRC, DNR		●					
3. Educate residents about climate change mitigation adaptation strategies.	CC, CSEC	●	●	●	●	●	●	●





Water Chestnut  
Harvesting

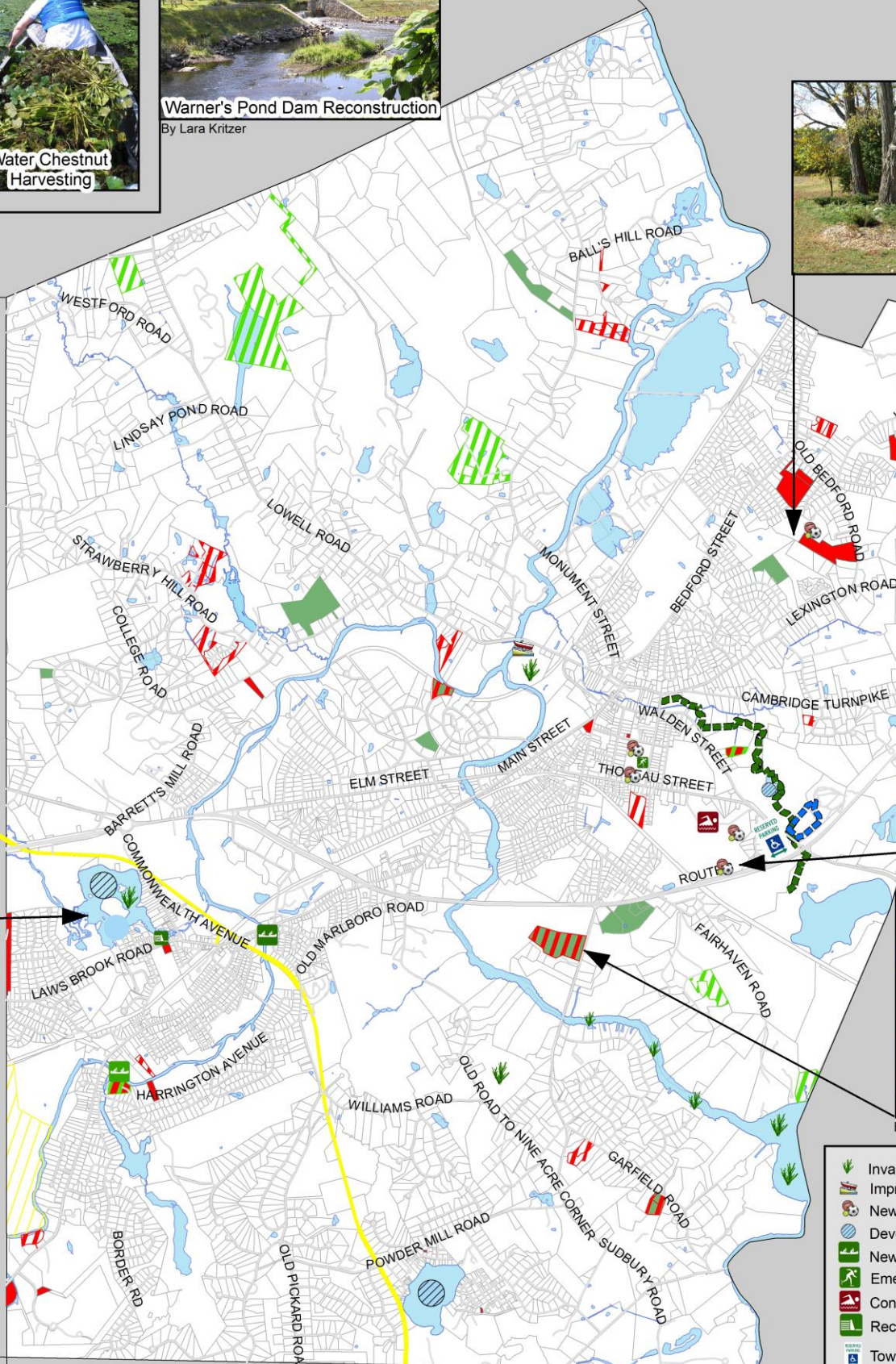


Warner's Pond Dam Reconstruction  
By Lara Kritzer



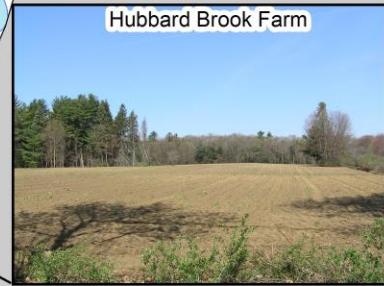
Playscape at Ripley

By Lara Kritzer



CCHS Synthetic Field

By Lara Kritzer



Hubbard Brook Farm

By Lara Kritzer

0 0.25 0.5 1 1.5 2 Miles

# Conservation and Recreation Accomplishments Since 2004

- Invasive Species Removal
- Improved Boat Launch
- New/Renovated Athletic Facilities
- Developed Watershed Management Plan
- New Canoe/Kayak Launches
- Emerson Skating Rink
- Construct Beede Center
- Reconstruct Warner's Pond Dam
- Town Forest Handicap Parking
- Assessed Trail
- Emerson-Thoreau Amble
- Bruce Freeman Rail Trail 25% Design
- Town Acquisitions since 2004
- Town Conservation Restrictions since 2004
- Potential Town Acquisition
- Land Trust Acquisitions since 2004
- Land Trust Conservation Restrictions since 2004
- Ponds/Rivers



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## Practical Ways for All Landowners to Improve Land in Concord

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To preserve and enhance open space, natural resources, and recreation in Concord, as well as address existing environmental problems and enhance stewardship and care of the resources in each neighborhood, an illustrative array of ideas follows. These are suggestions for individual residents on private land, for the Town in managing conservation and municipal land, for federal and state land agencies, and for organizations managing their lands. Additional printed recommendations are available at the Natural Resources and Public Works department offices on Keyes Rd. Ideas are grouped into four somewhat-overlapping categories: (A) species and habitats; (B) water; (C) materials; and (D) human activities.

### a) Species and habitats

1. Learn to identify the plant communities, vernal pools, and other aquatic habitats in town, and protect scarce ones. Loss of a scarce natural resource is an impoverishment of the town's rich resource base.
2. Do not remove plants or animals rare in town (or in the state), and avoid damage to their habitat. Loss of individuals of a rare species may lead to its disappearance, and pose difficulty for its reestablishment in an ever-changing area.
3. Maintain small piles of brush and branches near yards or buildings as appropriate. Such brush piles provide useful cover for many wildlife species. However, do not place them in natural habitats, which would alter natural ecosystem food webs.
4. Retain dead standing trees, dead branches on trees, and fallen logs so long as they do not pose hazards to safety or property damage. Dead wood provides important habitat for numerous species, including woodpeckers, flying squirrels, chickadees, wrens, and salamanders, as well as for beetles and other valuable insect foods for wildlife.
5. Plant only or mainly native species, and if non-native (exotic) species are used, rigorously avoid invasive species that spread into natural habitats. This helps protect native species in natural conservation areas against the invasions of exotic plants. Common buckthorn, Asiatic bittersweet, Norway maple, glossy buckthorn, Japanese barberry, Japanese knotweed, multiflora rose, purple loosestrife, winged euonymus, and shrub honeysuckles are among the prominent invasive exotic species in Concord.
6. Remove invasive species where permitted (not within 100 ft. of a wetland) and appropriate, but in the process retain a relatively continuous vegetation cover for wildlife.
7. Work with local and regional nurseries to eliminate known invasive species from their inventories. This should reduce the number of such future plantings in yards.
8. Identify and protect dog-free natural areas. Wildlife tend to be inhibited by the presence and urine scent-marking of dogs.
9. On appropriate large open areas, use management approaches that enhance grassland birds and other open-country species.

### b) Water

1. Maintain a relatively wide strip of natural vegetation, especially woody cover, along streams, rivers, and ponds. This provides shade and branches/logs for fish and other aquatic organisms, and reduces erosion, sedimentation, and chemical substance inputs to maintain water quality.
2. Minimize the watering of lawns, gardens and outdoor plants. In Concord's lush climate, lawns rarely require supplements to rain; even in droughts one soaking per week normally keeps a good green lawn.
3. Watering of lawns, gardens and outdoor plants should be done late in the day (if a noticeable fungus problem ever occurred, early morning watering may help, though excessive watering may be the cause). During the heat of the day in the growing season, much of the water is evapo-transpired, and hence wasted.
4. Private well-water use should be minimized. Most of Concord's public water supply comes from rainfall and groundwater, the same source as most private well water. Removal of groundwater during dry periods may result in well water shortages and a premature drying out of streams and wetlands, with associated ecological degradation. Residents are in a groundwater "bathtub" together and are neighbors in a town together, so lawn-watering practices and restrictions that protect water supplies apply to neighbors with public or private water supply alike.
5. Learn where groundwater flows within and from a property, and where stormwater drains and pipes lead. These are key steps in decreasing impacts on aquatic ecosystems and fish.
6. Minimize the use of road salt on driveways and roads. This helps protect against contamination of groundwater, wells, vernal pools, and other surface water.
7. Minimize the use of sand on driveways and roads. Some is washed through pipes or directly into streams, which alters stream-flows and smoothes out stream bottoms, thus reducing habitat for fish, valuable aquatic insects and plants.
8. Disconnect roads from water bodies such as streams and ponds where appropriate. Instead of having water flows carried directly and rapidly from road to stream- or pond-side, causing many negative hydrological and ecological effects, break up the route so that water percolates as much as possible into the ground.



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**c) Materials**

1. Avoid or minimize the use of fertilizers containing phosphorus or nitrogen. These elements tend to infiltrate through groundwater or wash directly into streams and ponds, causing eutrophication blooms of algae with disruptions of natural food webs and fish populations.
2. Avoid or minimize the use of insecticides and other pesticides. Almost all insects, including grubs, ants, and larvae perform important ecological roles in both natural and lawn/garden ecosystems.
3. Prevent hazardous wastes, including gasoline, oil, paints, stains and chlorine, from reaching the soil and water. They are toxic to native organisms and may move in the groundwater to wells and drinking water, as well as to aquatic ecosystems with fish.
4. Take steps to reduce incoming junk mail, bags and packaging material. This means there is less to be hauled away and less reaches the town's roadsides, streams and natural ecosystems.
5. List all outputs, e.g., solid waste, chemicals, noise, light and vehicles, from a property or business, and attempt to reduce each. This should lessen effects on neighbors, the community, and surrounding natural ecosystems.
6. Mulch or leave grass clippings on lawn and, where appropriate, recycle leaves and branches on site and compost vegetable scraps. This provides mulch or fertilizer for gardens, enhances soil, benefits wildlife, and reduces costs to the town.

**d) Human activities**

1. Do not remove or loosen historical or archaeological objects, e.g., from a stonewall or cellar hole on conservation land. These represent Concord's heritage over generations and are often of historical and scientific interest.
2. Identify and mark some trails that are appropriate, and inappropriate, for mountain biking and/or equestrian use. Also mark walking trails to avoid especially sensitive natural areas. This should reduce soil erosion and damage to natural vegetation.
3. Walk or bicycle for short trips (typical ½-mile walk = 10 minutes; typical bike ride 1 mile = 6 min.; brisk walk 1 mile = 15 min). This decreases vehicle noise and emissions, benefiting people, water, and wildlife.
4. Acquire and use small fuel-efficient vehicles within town. This reduces noise, emissions, road deterioration and chemical pollution, and can reduce the area of driveways and parking lots required, as well as benefiting water and wildlife.
5. Reduce the area of mowed lawn and the frequency of mowing. This will decrease the amount of gasoline, oil and emissions. It also reduces noise, both the deafening and the incessant background types. Electric and rechargeable battery mowers produce minimal noise and local air pollution. Motorless mowers have zero emissions, do not cause a noise disturbance and provide good exercise. Plant a meadow instead of lawn where possible.
6. Rake leaves; leaf blowers are significant polluters of both hydrocarbon emissions and noise. Raking provides some exercise and nature appreciation.
7. Establish a diversity of flowers and plants in lawns and gardens by reducing the use of water, fertilizer and pesticide, and by mowing, mulching, weeding and trimming to favor a richness of native plants. This should reduce costs. It helps protect groundwater, streams and ponds. A big reward will be the increase in butterflies, pollinators, birds and other wildlife.
8. Mainly use reasonable-size, nimble fire trucks in town, so over time many streets and intersections can become smaller. These are safer for children, the elderly and walkers, and have less hard surface and reduced stormwater runoff impacts.
9. Learn how the town works: the intriguing wastewater treatment facility; the Wheelabrator Waste-to-Energy Incinerator, where trash is taken for disposal; the original water-storage reservoir atop Nashawtuc Hill and the present water-storage location atop Pine Hill; the power substation, where electricity is captured and brought to a residence or business; a recycling facility, to learn what happens to materials after leaving the street curb. Knowledge of the processes involved should lead to resource conservation and less impact on the neighborhoods of Concord.

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